

Table 7.1 – Electricity Net Generation

(Billion Kilowatthours)

	<u>1980</u>	<u>1990</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2010</u>	<u>2020</u>	<u>2025</u>
Coal ¹	1,162	1,594	1,966	1,904	1,933	1,970	2,223	2,494	2,890
Petroleum ²	246	127	111	125	95	118	126	143	148
Natural Gas ³	346	373	601	639	691	629	922	1,374	1,403
Other Gases ⁴	N/A	10	14	9	11	11	4	5	5
Total Fossil Energy	1,754	2,104	2,692	2,677	2,730	2,729	3,276	4,016	4,446
Nuclear	251	577	754	769	780	764	813	830	830
Hydroelectric Pumped Storage ⁵	N/A	-4	-6	-9	-9	-9	-9	-9	-9
Conventional Hydroelectric ⁶	279	293	276	217	264	275	306	307	307
Geothermal	5	15	14	14	14	13	12	23	33
Wood ⁷	0	33	38	35	39	37	61	72	81
Waste ⁸	0	13	23	22	23	23	28	29	29
Solar Thermal and Photovoltaic	N/A	0	0	1	1	1	2	3	6
Wind	N/A	3	6	7	10	11	26	32	35
Total Renewable Energy	285	357	356	295	351	359	436	465	489
Generation for Own Use ⁹	N/A	N/A	N/A	N/A	N/A	N/A	-204	-229	-248
Other ¹⁰	N/A	4	5	5	6	5	10	10	10
Total Electricity Generation	2,290	3,038	3,802	3,737	3,858	3,848	4,526	5,313	5,767

Sources: EIA, Annual Energy Review 2003, DOE/EIA-0384(2003) (Washington, D.C., September 2004), Table 8.2a, and EIA, Annual Energy Outlook 2005, DOE/EIA-0383(2005) (Washington, D.C., February 2005), Tables A8 and A16.

Notes:

Data include electricity-only and combined-heat-and-power (CHP) plants whose primary business is to sell electricity, or electricity and heat, to the public. Through 1988, data are for generation at electric utilities only. Beginning in 1989, data also include generation at independent power producers and the commercial and industrial (end-use) sectors.

¹ Anthracite, bituminous coal, subbituminous coal, lignite, waste coal, and synthetic coal.

² Distillate fuel oil, residual fuel oil, petroleum coke, jet fuel, kerosene, other petroleum, and waste oil.

³ Natural gas, including a small amount of supplemental gaseous fuels. Forecast data include electricity generation from fuel cells.

⁴ Blast furnace gas, propane gas, and other manufactured and waste gases derived from fossil fuels, including refinery and still gas.

⁵ Pumped storage facility production minus energy used for pumping. Data for 1980 included in conventional hydroelectric power.

⁶ Hydroelectric data through 1988 are for generation at electric utilities and industrial plants only; beginning in 1989, data also include generation at independent power producers and commercial plants.

⁷ Wood, black liquor, and other wood waste.

⁸ Municipal solid waste, landfill gas, sludge waste, tires, agricultural byproducts, and other biomass.

⁹ Includes nonutility and end-use sector generation for own use.

¹⁰ Batteries, chemicals, hydrogen, pitch, purchased steam, sulfur, and miscellaneous technologies.

Table 7.2 – Net Generation at Electricity-Only Plants

(Billion Kilowatthours)

	<u>1980</u>	<u>1990</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2010</u>	<u>2020</u>	<u>2025</u>
Coal ¹	1,162	1,560	1,911	1,852	1,881	1,916	2,169	2,440	2,836
Petroleum ²	246	118	98	113	83	106	112	124	128
Natural Gas ³	346	265	399	427	457	406	634	1,038	1,048
Other Gases ⁴	N/A	0	0	0	0	0	N/A	N/A	N/A
Total Fossil Energy	1,754	1,942	2,408	2,392	2,422	2,428	2,915	3,602	4,012
Nuclear	251	577	754	769	780	764	813	830	830
Hydroelectric Pumped Storage ⁵	N/A	-4	-6	-9	-9	-9	-9	-9	-9
Conventional Hydroelectric ⁶	276	290	271	214	260	269	300	301	301
Geothermal	5.1	15	14	14	14	13	12	23	33
Wood ⁷	0.3	6	7	7	7	7	28	32	37
Waste ⁸	0	10	18	17	17	17	26	26	26
Solar Thermal and Photovoltaic	N/A	0	0	1	1	1	1	2	2
Wind	N/A	3	6	7	10	11	26	32	35
Total Renewable Energy	282	324	316	259	311	318	393	416	434
Other ⁹	N/A	0	0	0	1	0	N/A	N/A	N/A
Total Electricity Generation	2,286	2,840	3,473	3,411	3,505	3,501	4,112	4,839	5,267

Sources: EIA, *Annual Energy Review 2003*, DOE/EIA-0384(2003) (Washington, D.C., September 2004), Table 8.2c, and EIA, *Annual Energy Outlook 2005*, DOE/EIA-0383(2005) (Washington, D.C., February 2005), Tables A8 and A16.

Notes:

Data are for electricity-only plants in the electric power sector whose primary business is to sell electricity to the public. Through 1988, data are for generation at electric utilities only. Beginning in 1989, data also include generation at independent power producers.

¹ Anthracite, bituminous coal, subbituminous coal, lignite, waste coal, and synthetic coal.

² Distillate fuel oil, residual fuel oil, petroleum coke, jet fuel, kerosene, other petroleum, and waste oil.

³ Natural gas, including a small amount of supplemental gaseous fuels. Forecast data include electricity generation from fuel cells.

⁴ Blast furnace gas, propane gas, and other manufactured and waste gases derived from fossil fuels, including refinery and still gas.

⁵ Pumped storage facility production minus energy used for pumping. Data for 1980 included in conventional hydroelectric power.

⁶ Hydroelectric data through 1988 are for generation at electric utilities and industrial plants only; beginning in 1989, data also include generation at independent power producers and commercial plants.

⁷ Wood, black liquor, and other wood waste.

⁸ Municipal solid waste, landfill gas, sludge waste, tires, agricultural byproducts, and other biomass.

⁹ Batteries, chemicals, hydrogen, pitch, purchased steam, sulfur, and miscellaneous technologies.

Table 7.3 – Electricity Generation at Combined-Heat-and-Power Plants

(Billion Kilowatthours)

	<u>1980</u>	<u>1990</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2010</u>	<u>2020</u>	<u>2025</u>
Coal ¹	N/A	33	55	51	51	53	54	54	54
Petroleum ²	N/A	8	13	11	11	12	15	19	20
Natural Gas ³	N/A	105	197	208	230	219	288	337	355
Other Gases ⁴	N/A	10	14	9	11	11	4	5	5
Total Fossil Energy	N/A	157	279	279	303	295	361	415	434
Nuclear	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Hydroelectric Pumped Storage ⁵	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Conventional Hydroelectric ⁶	N/A	3	4	3	4	6	6	6	6
Geothermal	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0
Wood ⁷	N/A	27	30	29	31	30	34	40	43
Waste ⁸	N/A	1	3	2	3	3	2	2	2
Solar Thermal and Photovoltaic	N/A	N/A	N/A	N/A	N/A	N/A	1	2	4
Wind	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total Renewable Energy	N/A	32	38	35	39	39	43	50	55
Other ⁹	N/A	4	5	5	4	5	10	10	10
Total Electricity Generation	N/A	192	321	319	346	339	413	475	500

Sources: EIA, *Annual Energy Review 2003*, DOE/EIA-0384(2003) (Washington, D.C., September 2004), Table 8.2c, and EIA, *Annual Energy Outlook 2005*, DOE/EIA-0383(2005) (Washington, D.C., February 2005), Tables A8 and A16.

Notes: Includes combined-heat-and-power (CHP) plants whose primary business is to sell electricity and heat to the public.

For 1989-2002, does not include electric utility CHP plants—these are included in "Net Generation at Electricity-Only Plants " in Table 7.2. Also includes commercial and industrial CHP and a small number of commercial and industrial (end-use sectors) electricity-only plants.

¹ Anthracite, bituminous coal, subbituminous coal, lignite, waste coal, and synthetic coal.

² Distillate fuel oil, residual fuel oil, petroleum coke, jet fuel, kerosene, other petroleum, and waste oil.

³ Natural gas, including a small amount of supplemental gaseous fuels. Forecast data include electricity generation from fuel cells.

⁴ Blast furnace gas, propane gas, and other manufactured and waste gases derived from fossil fuels, including refinery and still gas.

⁵ Pumped storage facility production minus energy used for pumping. Data for 1980 included in conventional hydroelectric power.

⁶ Hydroelectric data through 1988 are for generation at electric utilities and industrial plants only; beginning in 1989, data also include generation at independent power producers and commercial plants.

⁷ Wood, black liquor, and other wood waste.

⁸ Municipal solid waste, landfill gas, sludge waste, tires, agricultural byproducts, and other biomass.

⁹ Batteries, chemicals, hydrogen, pitch, purchased steam, sulfur, and miscellaneous technologies.

Table 7.4 – Generation and Transmission/Distribution Losses

(Billion kWh)

	<u>1980</u>	<u>1990</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2010</u>	<u>2020</u>	<u>2025</u>
Net Generation									
Delivered	2,290	3,038	3,802	3,737	3,858	3,848	4,322	5,085	5,522
Generation Losses ¹	4,859	6,305	7,793	7,578	7,767	7,769	8,506	9,507	10,137
Transmission and Distribution Losses ²	N/A	224	238	224	247	195	260	289	311

Sources: Calculated from EIA, *Annual Energy Review 2003*, DOE/EIA-0384(2003) (Washington, D.C., September 2004), Tables 8.1, 8.2a and 8.4a, and EIA, *Annual Energy Outlook 2005*, DOE/EIA-0383(2005) (Washington, D.C., February 2005), Tables A2 and A8.

Notes:

¹ Generation Losses for all years are calculated by calculating a Gross Generation value in billion kWh by multiplying the energy input in trillion Btu by (1000/3412) and subtracting the Net Generation in billion kWh from the Gross Generation estimate.

² Transmission and Distribution Losses = Electricity Needed to be Transmitted - Electricity Sales, where Electricity Needed to be Transmitted = Total Generation from Electric Generators + Cogenerators + Net Imports - Generation for Own Use. Represents energy losses that occur between the point of generation and delivery to the customer, and data collection frame differences and nonsampling error.

Table 7.5 – Electricity Trade

(Billion Kilowatthours)

	<u>1980</u>	<u>1990</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2010</u>	<u>2020</u>	<u>2025</u>
Interregional Electricity Trade									
Gross Domestic Firm Power Trade	N/A	N/A	N/A	143	139	137	106	51	38
Gross Domestic Economy Trade	N/A	N/A	N/A	182	210	199	207	133	102
Gross Domestic Trade	N/A	N/A	N/A	325	349	335	312	184	140
International Electricity Trade									
Firm Power Imports from Mexico and Canada	N/A	N/A	N/A	12	10	11	2	1	0
Economy Imports from Mexico and Canada	N/A	N/A	N/A	26	27	18	29	31	25
Gross Imports from Mexico and Canada	25	18	49	39	36	31	31	32	25
Firm Power Exports to Mexico and Canada	N/A	N/A	N/A	7	6	6	1	0	0
Economy Exports to Mexico and Canada	N/A	N/A	N/A	10	9	20	21	16	14
Gross Exports to Canada and Mexico	4	16	15	16	14	24	22	16	14

Sources: EIA, *Annual Energy Review 2003*, DOE/EIA-0384(2003) (Washington, D.C., September 2004), Table 8.1, and EIA, *Annual Energy Outlook 2005*, DOE/EIA-0383(2005) (Washington, D.C., February 2005), Table A10.

Notes:

All data are from EIA AEO except Gross Imports and Exports for 1980-2003.